

Case report

Extreme lateral lumbar disc herniation

E C Wallace

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Lumbar disc herniations that project far laterally towards or lateral to the intervertebral foramen show minimal or no abnormalities on myelography and compress the nerve root one level above that of the classical posterolateral herniation. Computed tomography is the imaging method of choice, either as the first investigation or following a negative or equivocal myelogram.

CASE HISTORY

A 60-year-old man presented with a three-week history of low back pain and right sciatica after lifting a heavy weight. On examination, there was marked restriction of straight leg raising on the right side with a reduced knee jerk and impaired sensation in the right L3 and L4 dermatomes. The provisional diagnosis was L4 root compression by a herniated L3/4 disc. Myelography with water-soluble contrast medium showed no abnormality, and the following day a computed tomography scan was carried out at the L3/4, L4/5 and L5/S1 levels. This confirmed that the L3/4 and L5/S1 discs were normal. At L4/5 there was a large disc herniation on the right side lateral to the intervertebral foramen (Fig 1).

The herniated disc was surgically exposed via a modified lateral approach with removal of the superior and inferior facets at L4/5. Two large pieces of degenerate disc were removed with decompression of the L4 root laterally. His back pain and sciatica disappeared within a few days of operation, and at review six months later he remained symptom-free.

COMMENT

An extreme lateral lumbar disc herniation may be defined as prolapse of disc material such that it lies beyond the intervertebral foramen with or without extension into the foramen.¹ The reported incidence has ranged from

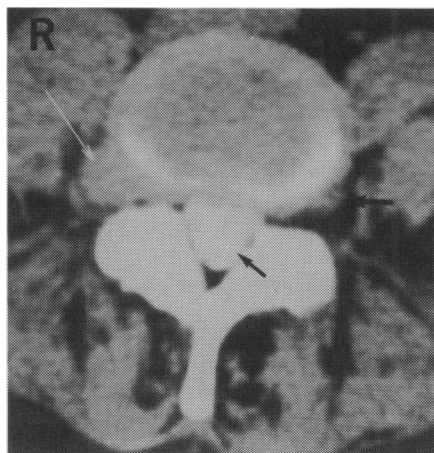


Fig 1. CT scan at level of L4/5 showing a large right-sided extreme lateral lumbar disc herniation (white arrow). Small black arrow = thecal sac containing residual contrast medium from myelogram. Large black arrow = left L4 root in paraspinal fat.

0.7–11.7%.^{2, 3, 4} In a recent series of 1,600 operated lumbar disc herniations, the overall incidence of this type of lesion was 6%, representing 6% of herniations at L5/S1, 4% at L4/5 and 18% at L3/4.⁴ Characteristically, it occurs in the sixth decade. Reproduction of pain with lateral bending has been reported as a reliable sign of this condition.^{2, 5} However, other authors have not found any characteristic clinical features which distinguish it from a classical posterolateral herniation.⁴

The classical posterolateral lumbar disc herniation compresses the lumbar nerve root within the spinal canal as it passes obliquely inferiorly towards the intervertebral foramen at the level below. Thus, a herniation at L3/4 will compress the L4 root (Fig 2a). Within the paraspinal tissues, the root passes over the lateral margin of the disc below (4/5); thus the L4 root will also be compressed laterally by an extreme lateral lumbar disc herniation at this level (Fig 2b). Therefore, this compression occurs at one disc space below that of a classical posterolateral herniation causing a similar clinical syndrome.

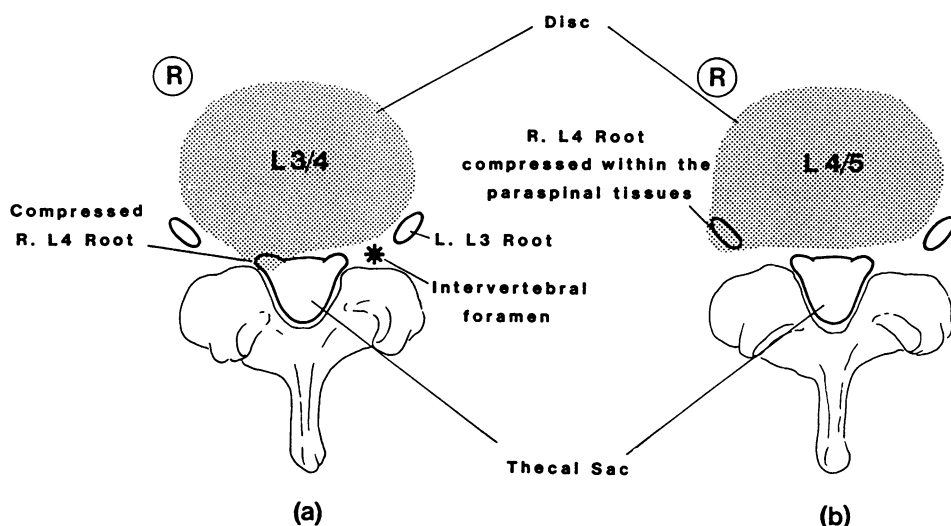


Fig 2. Diagrammatic representation of (a) a classical right posterolateral disc protrusion at L3/4 compressing right L4 root and (b) an extreme lateral lumbar disc herniation at L4/5 compressing right L4 root in the paraspinal tissues.

The radiological diagnosis of lumbar disc herniation depends on visualising the herniated material or deformity caused by it. Although myelography with water-soluble contrast medium is very reliable in detecting classical herniations,⁶ only subtle changes are seen in extreme lateral lumbar disc herniations. These include incomplete filling of a nerve root distally with proximal swelling and loss of the delicate outline of the root: a significant proportion of cases show no abnormality.⁴ Discography (with or without computed tomography) is invasive and time-consuming but may confirm the symptomatic level. Magnetic resonance may prove to be of value.

Computed tomography gives a direct demonstration of the disc and is non-invasive. It is highly accurate in the detection of extreme lateral lesions.^{4, 5} It is the examination of choice when this diagnosis is considered,⁶ and indeed probably for all suspected disc herniations. It is often difficult to distinguish clinically L5

and S1 root pain and L2, L3 and L4 root pain. In addition, the possibility of extreme lateral herniations may not be suspected and CT scanning in a patient with root compression therefore should include at least two disc levels and intervertebral foramina. In practice, it is usual to scan the L3/4, L4/5 and L5/S1 levels.

The diagnosis of extreme lateral lumbar disc herniations has important implications for the surgeon since a conventional approach to the disc may result in failure to locate the herniation. Techniques used include total facetectomy through a midline incision and a lateral approach via a paramedian incision with retraction or splitting of the paraspinal muscles.^{4, 5}

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